

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re Application of:

Peter Lind, Linda S. Wood, Ronald
Hiebsch, Valerie Ruff, Eleni Lindberg, Luis
A. Parodi, Gabriel Vogeli

Serial No.: Not Yet Assigned

Group Art Unit: Not Yet Assigned

Filing Date: Herewith

Examiner: Not Yet Assigned

For: NOVEL G PROTEIN COUPLED RECEPTORS

BOX SEQUENCE

Assistant Commissioner for Patents
Washington DC 20231

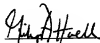
STATEMENT TO SUPPORT FILING AND SUBMISSION IN ACCORDANCE
WITH 37 CFR §§ 1.821 THROUGH 1.825

- ☒ I hereby state, in accordance with the requirements of 37 C.F.R. §1.821(f), that the contents of the paper and computer readable copies of the Sequence Listing, submitted in accordance with 37 CFR §1.821(c) and (e), respectively are the same.
- ☐ I hereby state that the submission filed in accordance with 37 CFR §1.821(g) does not include new matter.
- ☐ I hereby state that the submission filed in accordance with 37 CFR §1.821(h) does not include new matter or go beyond the disclosure in the international application as filed.
- ☐ I hereby state that the amendments, made in accordance with 37 CFR §1.825(a), included in the substitute sheet(s) of the Sequence Listing are supported in the application, as filed, at pages _____. I hereby state that the substitute sheet(s) of the Sequence Listing does (do) not include new matter.
- ☐ I hereby state that the substitute copy of the computer readable form, submitted in accordance with 37 CFR §1.825(b), is the same as the amended Sequence Listing.



I hereby state that the substitute copy of the computer readable form, submitted in accordance with 37 CFR §1.825(d), contains identical data to that originally filed.

Date: 12/28/2000


Gwilym J.O. Attwell
Registration No. 45,449

Woodcock Washburn Kurtz
Mackiewicz & Norris LLP
One Liberty Place - 46th Floor
Philadelphia PA 19103
Telephone: (215) 568-3100
Facsimile: (215) 568-3439

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SEQUENCE LISTING

<110> Lind, Peter
 Wood, Linda S.
 Hiebsch, Ronald
 Ruff, Valerie
 Lindberg, Eleni
 Parodi, Luis A.
 Vogeli, Gabriel

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 <151> 2000-02-23

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Arg Leu Asp Phe Pro Gly Phe Val Gln Thr Ser Leu Ala Thr Leu Arg
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Phe Phe Cys Tyr Ile Val Gly Leu Ser Leu Leu Ala Ala Val Ser Val
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Glu Gln Cys Leu Ala Ala Leu Phe Pro Ala Trp Tyr Ser Cys Arg Arg
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Phe Ser Val Tyr Val Leu Ser Leu Ala Gly Ala Asp Phe Leu Phe Leu
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Cys Phe Gln Ile Ile Asn Cys Leu Val Tyr Leu Ser Asn Phe Phe Cys
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Ser Ile Ser Ile Asn Phe Pro Ser Phe Phe Thr Thr Val Met Thr Cys
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Ala Tyr Leu Ala Gly Leu Ser Met Leu Ser Thr Val Ser Thr Glu Arg
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Cys Leu Ser Val Leu Trp Pro Ile Trp Tyr Arg Cys Arg Arg Pro Arg
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Arg Thr Phe Phe Ala Ala Lys Ile Val Ile Gly Met Ala Leu Val Gly
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Ile Met Leu Val Cys Gly Ile Gly Asn Phe Ile Phe Ile Ala Ala Leu
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Val Arg Tyr Lys Lys Leu Arg Asn Leu Thr Asn Leu Leu Ile Ala Asn
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Leu Ala Ile Ser Asp Phe Leu Val Ala Ile Val Cys Cys Pro Phe Glu
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Met Asp Tyr Tyr Val Val Arg Gln Leu Ser Trp Glu His Gly His Val
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Leu Tyr Cys Ser Cys Arg Leu Met Arg Gly Val Ser Ile Pro Pro Arg
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Cys Gly Cys Met Gly Asp Ser Lys Ala Cys Pro Leu Thr Asp Ser Glu
 195 200 205

Lys Ser Ser Pro Phe Pro Ala Leu Phe
 210 215

<210> 20
 <211> 60
 <212> PRT
 <213> Homo sapiens

<400> 20

Ala Phe Ile Cys Cys Trp Ser Pro Tyr Phe Leu Phe Asp Ile Leu Asp
 1 5 10 15

Asn Phe Asn Leu Leu Pro Asp Thr Gln Glu Arg Phe Tyr Ala Ser Val
 20 25 30

Ile Ile Gln Asn Leu Pro Ala Leu Asn Ser Ala Ile Asn Pro Leu Ile
 35 40 45

Tyr Cys Val Phe Ser Ser Ser Ile Ser Phe Pro Cys
 50 55 60

<210> 21
 <211> 67
 <212> PRT
 <213> Homo sapiens

<400> 21

Glu Lys Gln Ala Arg Val Leu Ile Val Ile Ala Trp Ser Leu Ser Phe
 1 5 10 15

Leu Phe Ser Ile Pro Thr Leu Ile Ile Phe Gly Lys Arg Thr Leu Ser
 20 25 30
 Asn Gly Glu Val Gln Cys Trp Ala Leu Trp Pro Asp Asp Ser Tyr Trp
 35 40 45
 Thr Pro Tyr Met Thr Ile Val Ala Phe Leu Val Tyr Phe Ile Pro Leu
 50 55 60
 Thr Ile Ile
 65
 <210> 22
 <211> 216
 <212> PRT
 <213> Homo sapiens
 <400> 22
 Ser Gln Tyr Arg Met Leu Gly Arg Gly Thr Cys Asp Asn Val His Ser
 1 5 10 15
 Ile Ser Tyr Ala Arg Asn Lys Ala Leu Pro His Trp Leu Cys His Asp
 20 25 30
 Tyr Asp Ile Leu Gly Val Trp Gly Ala Trp Val Val Arg Ile Pro Tyr
 35 40 45
 Arg Ser Pro Glu Ala Trp Gly Gly Pro Val Gly Asp Ala Arg Ser Leu
 50 55 60
 Cys Ser Thr Leu Pro His Ala Arg Leu Ser Asn Ala Lys Lys Gln Ala
 65 70 75 80
 Val His Thr Val Met Gly Ile Trp Met Val Ser Phe Ile Leu Ser Ala
 85 90 95
 Leu Pro Ala Val Gly Trp His Asp Thr Ser Glu Arg Phe Tyr Thr His
 100 105 110
 Gly Cys Arg Phe Ile Val Ala Glu Ile Gly Leu Gly Phe Gly Val Cys
 115 120 125
 Phe Leu Leu Leu Val Gly Gly Ser Val Ala Met Gly Val Ile Cys Thr
 130 135 140
 Ala Ile Ala Leu Phe Gln Thr Leu Ala Val Gln Val Gly Arg Gln Ala
 145 150 155 160
 Asp Arg Arg Ala Phe Thr Val Pro Thr Ile Val Val Glu Asp Ala Gln
 165 170 175
 Gly Lys Arg Arg Ser Ser Ile Asp Gly Ser Glu Pro Ala Lys Thr Ser
 180 185 190
 Leu Gln Thr Thr Gly Leu Val Thr Thr Ile Val Phe Ile Tyr Asp Cys
 195 200 205
 Leu Met Gly Phe Pro Val Leu Val
 210 215

<210> 23
 <211> 119
 <212> PRT
 <213> Homo sapiens

<400> 23

Met Ser Asp Glu Arg Arg Leu Pro Gly Ser Ala Val Gly Trp Leu Val
 1 5 10 15

Cys Gly Gly Leu Ser Leu Leu Ala Asn Ala Trp Gly Ile Leu Ser Val
 20 25 30

Gly Ala Lys Gln Lys Lys Trp Lys Pro Leu Glu Phe Leu Leu Cys Thr
 35 40 45

Leu Ala Ala Thr His Met Leu Asn Val Ala Val Pro Ile Ala Thr Tyr
 50 55 60

Ser Val Val Gln Leu Arg Arg Gln Arg Pro Asp Phe Glu Trp Asn Glu
 65 70 75 80

Gly Leu Cys Lys Val Phe Val Ser Thr Phe Tyr Thr Leu Thr Leu Ala
 85 90 95

Thr Cys Phe Ser Val Thr Ser Leu Ser Tyr His Arg Met Trp Met Val
 100 105 110

Cys Trp Pro Val Asn Tyr Arg
 115

<210> 24
 <211> 330
 <212> PRT
 <213> Homo sapiens

<400> 24

Met Asp Pro Thr Thr Pro Ala Trp Gly Thr Glu Ser Thr Thr Val Asn
 1 5 10 15

Gly Asn Asp Gln Ala Leu Leu Leu Cys Gly Lys Glu Thr Leu Ile
 20 25 30

Pro Val Phe Leu Ile Leu Phe Ile Ala Leu Val Gly Leu Val Gly Asn
 35 40 45

Gly Phe Val Leu Trp Leu Leu Gly Phe Arg Met Arg Arg Asn Ala Phe
 50 55 60

Ser Val Tyr Val Leu Ser Leu Ala Gly Ala Asp Phe Leu Phe Leu Cys
 65 70 75 80

Phe Gln Ile Ile Asn Cys Leu Val Tyr Leu Ser Asn Phe Phe Cys Ser
 85 90 95

Ile Ser Ile Asn Phe Pro Ser Phe Phe Thr Thr Val Met Thr Cys Ala
 100 105 110

Tyr Leu Ala Gly Leu Ser Met Leu Ser Thr Val Ser Thr Glu Arg Cys

115	120	125
Leu Ser Val Leu Trp Pro Ile Trp Tyr Arg Cys Arg Arg Pro Arg His 130 135 140		
Leu Ser Ala Val Val Cys Val Leu Leu Trp Ala Leu Ser Leu Leu Leu 145 150 155 160		
Ser Ile Leu Glu Gly Lys Phe Cys Gly Phe Leu Phe Ser Asp Gly Asp 165 170 175		
Ser Gly Trp Cys Gln Thr Phe Asp Phe Ile Thr Ala Ala Trp Leu Ile 180 185 190		
Phe Leu Phe Met Val Leu Cys Gly Ser Ser Leu Ala Leu Leu Val Arg 195 200 205		
Ile Leu Cys Gly Ser Arg Gly Leu Pro Leu Thr Arg Leu Tyr Leu Thr 210 215 220		
Ile Leu Leu Thr Val Leu Val Phe Leu Leu Cys Gly Leu Pro Phe Gly 225 230 235 240		
Ile Gln Trp Phe Leu Ile Leu Trp Ile Trp Lys Asp Ser Asp Val Leu 245 250 255		
Phe Cys His Ile His Pro Val Ser Val Val Leu Ser Ser Leu Asn Ser 260 265 270		
Ser Ala Asn Pro Ile Ile Tyr Phe Phe Val Gly Ser Phe Arg Lys Gln 275 280 285		
Trp Arg Leu Gln Gln Pro Ile Leu Lys Leu Ala Leu Gln Arg Ala Leu 290 295 300		
Gln Asp Ile Ala Glu Val Asp His Ser Glu Gly Cys Phe Arg Gln Gly 305 310 315 320		
Thr Pro Glu Met Ser Arg Ser Ser Leu Val 325 330		

<210> 25
 <211> 371
 <212> PRT
 <213> Homo sapiens

<400> 25

Met Pro Ala Asn Phe Thr Glu Gly Ser Phe Asp Ser Ser Gly Thr Gly 1 5 10 15
Gln Thr Leu Asp Ser Ser Pro Val Ala Cys Thr Glu Thr Val Thr Phe 20 25 30
Thr Glu Val Val Glu Gly Lys Glu Trp Gly Ser Phe Tyr Tyr Ser Phe 35 40 45
Lys Thr Glu Gln Leu Ile Thr Leu Trp Val Leu Phe Val Phe Thr Ile 50 55 60
Val Gly Asn Ser Val Val Leu Phe Ser Thr Trp Arg Arg Lys Lys Lys

65				70						75					80
Ser	Arg	Met	Thr	Phe	Phe	Val	Thr	Gln	Leu	Ala	Ile	Thr	Asp	Ser	Phe
				85					90					95	
Thr	Gly	Leu	Val	Asn	Ile	Leu	Thr	Asp	Ile	Ile	Trp	Arg	Phe	Thr	Gly
			100					105					110		
Asp	Phe	Thr	Ala	Pro	Asp	Leu	Val	Cys	Arg	Val	Val	Arg	Tyr	Leu	Gln
		115					120					125			
Val	Val	Leu	Leu	Tyr	Ala	Ser	Thr	Tyr	Val	Leu	Val	Ser	Leu	Ser	Ile
		130					135				140				
Asp	Arg	Tyr	His	Ala	Ile	Val	Tyr	Pro	Met	Lys	Phe	Leu	Gln	Gly	Glu
		145			150					155					160
Lys	Gln	Ala	Arg	Val	Leu	Ile	Val	Ile	Ala	Trp	Ser	Leu	Ser	Phe	Leu
			165						170					175	
Phe	Ser	Ile	Pro	Thr	Leu	Ile	Ile	Phe	Gly	Lys	Arg	Thr	Leu	Ser	Asn
			180					185					190		
Gly	Glu	Val	Gln	Cys	Trp	Ala	Leu	Trp	Pro	Gly	Asp	Ser	Tyr	Trp	Thr
		195					200					205			
Pro	Tyr	Met	Thr	Ile	Val	Ala	Phe	Leu	Val	Tyr	Phe	Ile	Pro	Leu	Thr
		210				215					220				
Ile	Ile	Ser	Ile	Met	Tyr	Gly	Ile	Val	Ile	Arg	Thr	Ile	Trp	Ile	Lys
		225			230					235					240
Ser	Lys	Thr	Tyr	Glu	Thr	Val	Ile	Ser	Asn	Cys	Ser	Asp	Gly	Lys	Leu
			245						250					255	
Cys	Ser	Ser	Tyr	Asn	Arg	Gly	Leu	Ile	Ser	Lys	Ala	Lys	Ile	Lys	Ala
			260					265					270		
Ile	Lys	Tyr	Ser	Ile	Ile	Ile	Ile	Leu	Ala	Phe	Ile	Cys	Cys	Trp	Ser
		275					280					285			
Pro	Tyr	Phe	Leu	Phe	Asp	Ile	Leu	Asp	Asn	Phe	Asn	Leu	Leu	Pro	Asp
		290				295					300				
Thr	Gln	Glu	Arg	Phe	Tyr	Ala	Ser	Val	Ile	Ile	Gln	Asn	Leu	Pro	Ala
		305			310					315					320
Leu	Asn	Ser	Ala	Ile	Asn	Pro	Pro	Ile	Tyr	Cys	Val	Phe	Ser	Ser	Ser
			325					330						335	
Ile	Ser	Phe	Pro	Cys	Arg	Glu	Gln	Arg	Ser	Gln	Asp	Ser	Arg	Met	Thr
			340					345					350		
Phe	Arg	Glu	Arg	Thr	Glu	Arg	His	Glu	Met	Gln	Ile	Leu	Ser	Lys	Pro
		355					360					365			
Glu	Phe	Ile													
		370													

<210> 26
<211> 393

<212> .PRT
 <213> Homo sapiens
 <400> 26

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Met Glu Thr Thr Met Gly Phe Met Asp Asp Asn Ala Thr Asn Thr Ser
1          5          10          15

Thr Ser Phe Leu Ser Val Leu Asn Pro His Gly Ala His Ala Thr Ser
20          25          30

Phe Pro Phe Asn Phe Ser Tyr Ser Asp Tyr Asp Met Pro Leu Asp Glu
35          40          45

Asp Glu Asp Val Thr Asn Ser Arg Thr Phe Phe Ala Ala Lys Ile Val
50          55          60

Ile Gly Met Ala Leu Val Gly Ile Met Leu Val Cys Gly Ile Gly Asn
65          70          75          80

Phe Ile Phe Ile Ala Ala Leu Val Arg Tyr Lys Lys Leu Arg Asn Leu
85          90          95

Thr Asn Leu Leu Ile Ala Asn Leu Ala Ile Ser Asp Phe Leu Val Ala
100         105         110

Ile Val Cys Cys Pro Phe Glu Met Asp Tyr Tyr Val Val Arg Gln Leu
115         120         125

Ser Trp Glu His Gly His Val Leu Cys Thr Ser Val Asn Tyr Leu Arg
130         135         140

Thr Val Ser Leu Tyr Val Ser Thr Asn Ala Leu Leu Ala Ile Ala Ile
145         150         155         160

Asp Arg Tyr Leu Ala Ile Val His Pro Leu Arg Pro Arg Met Lys Cys
165         170         175

Gln Thr Ala Thr Gly Leu Ile Ala Leu Val Trp Thr Val Ser Ile Leu
180         185         190

Ile Ala Ile Pro Ser Ala Tyr Phe Thr Thr Glu Thr Val Leu Val Ile
195         200         205

Val Lys Ser Gln Glu Lys Ile Phe Cys Gly Gln Ile Trp Pro Val Asp
210         215         220

Gln Gln Leu Tyr Tyr Lys Ser Tyr Phe Leu Phe Ile Phe Gly Ile Glu
225         230         235         240

Phe Val Gly Pro Val Val Thr Met Thr Leu Cys Tyr Ala Arg Ile Ser
245         250         255

Arg Glu Leu Trp Phe Lys Ala Val Pro Gly Phe Gln Thr Glu Gln Ile
260         265         270

Arg Lys Arg Leu Arg Cys Arg Arg Lys Thr Val Leu Val Leu Met Cys
275         280         285

Ile Leu Thr Ala Tyr Val Leu Cys Trp Ala Pro Phe Tyr Gly Phe Thr
290         295         300

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09750373.122800

Ile Val Arg Asp Phe Phe Pro Thr Val Phe Val Lys Glu Lys His Tyr
305 310 315 320

Leu Thr Ala Phe Tyr Ile Val Glu Cys Ile Ala Met Ser Asn Ser Met
325 330 335

Ile Asn Thr Leu Cys Phe Val Thr Val Lys Asn Asp Thr Val Lys Tyr
340 345 350

Phe Lys Lys Ile Met Leu Leu His Trp Lys Ala Ser Tyr Asn Gly Gly
355 360 365

Lys Ser Ser Ala Asp Leu Asp Leu Lys Thr Ile Gly Met Pro Ala Thr
370 375 380

Glu Glu Val Asp Cys Ile Arg Leu Lys
385 390

<210> 27
<211> 389
<212> PRT
<213> Homo sapiens

<400> 27

Met Gly Phe Met Asp Asp Asn Ala Thr Asn Thr Ser Thr Ser Phe Leu
1 5 10 15

Ser Val Leu Asn Pro His Gly Ala His Ala Thr Ser Phe Pro Phe Asn
20 25 30

Phe Ser Tyr Ser Asp Tyr Asp Met Pro Leu Asp Glu Asp Glu Asp Val
35 40 45

Thr Asn Ser Arg Thr Phe Phe Ala Ala Lys Ile Val Ile Gly Met Ala
50 55 60

Leu Val Gly Ile Met Leu Val Cys Gly Ile Gly Asn Phe Ile Phe Ile
65 70 75 80

Ala Ala Leu Val Arg Tyr Lys Lys Leu Arg Asn Leu Thr Asn Leu Leu
85 90 95

Ile Ala Asn Leu Ala Ile Ser Asp Phe Leu Val Ala Ile Val Cys Cys
100 105 110

Pro Phe Glu Met Asp Tyr Tyr Val Val Arg Gln Leu Ser Trp Glu His
115 120 125

Gly His Val Leu Cys Thr Ser Val Asn Tyr Leu Arg Thr Val Ser Leu
130 135 140

Tyr Val Ser Thr Asn Ala Leu Leu Ala Ile Ala Ile Asp Arg Tyr Leu
145 150 155 160

Ala Ile Val His Pro Leu Arg Pro Arg Met Lys Cys Gln Thr Ala Thr
165 170 175

Gly Leu Ile Ala Leu Val Trp Thr Val Ser Ile Leu Ile Ala Ile Pro
180 185 190

<210> 30
<211> 32
<212> DNA
<213> Artificial

<220>
<223> Novel Sequence

<400> 30
ttcactcgag ctacaccaga ctgcttctcg ac

32

<210> 31
<211> 19
<212> DNA
<213> Artificial

<220>
<223> Novel Sequence

<400> 31
taggcacagg tcatcacag

19

<210> 32
<211> 18
<212> DNA
<213> Artificial

<220>
<223> Novel Sequence

<400> 32
ttggacgcca ggaaggtg

18

<210> 33
<211> 26
<212> DNA
<213> Artificial

<220>
<223> Novel Sequence

<400> 33
gcctggagcc tgtcttttct gttctc

26

<210> 34
<211> 28
<212> DNA
<213> Artificial

<220>
<223> Novel Sequence

<400> 34
gtagatgagg gggttgatgg cactattc

28

<210> 35
 <211> 28
 <212> DNA
 <213> Artificial

 <220>
 <223> Novel Sequence

 <400> 35 28
 cctgatcata tttgggaaga ggacactg

 <210> 36
 <211> 28
 <212> DNA
 <213> Artificial

 <220>
 <223> Novel Sequence

 <400> 36 28
 gatagccttg atttttgcct ttgagatg

 <210> 37
 <211> 30
 <212> DNA
 <213> Artificial

 <220>
 <223> Novel Sequence

 <400> 37 30
 gcagcagaca atggccacca ggaagtcaga

 <210> 38
 <211> 30
 <212> DNA
 <213> Artificial

 <220>
 <223> Novel Sequence

 <400> 38 30
 tgagcagggtt ggtgaggttg cgcagtttct

 <210> 39
 <211> 22
 <212> DNA
 <213> Artificial

 <220>
 <223> Novel Sequence

 <400> 39 22
 tttctggct cttgacaatg ac

 <210> 40

19

60

120

180

240

300

360

430

490

E 40

600

660

100

...

...

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 tcaggagagc ctcccgccgg ggccctggtg acatagcagc ctgagccctg gggcccccga 1440
 cccagctgc agccccctg aggcaagagg gtgacgtggg gaaggtggtg gggtcagagg 1500
 ctggggcccg ccggacctgg aggagggcctt ggtgggtgac ccggtcatgt gctgtcaaag 1560
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<210> 42
 <211> 530
 <212> PRT
 <213> Homo sapiens

<400> 42

Val Ser Arg Asp Gly Ala Ile Ala Leu Pro Gly Ala Thr Glu Pro Asp
 1 5 10 15
 Ser Ile Ser Lys Lys Lys Arg Pro Phe Gly Ser Arg His His Gln Gln
 20 25 30
 Gly Ala Pro Trp Val Ser Asp Pro Leu Pro Thr Ser Pro Gly Pro Cys
 35 40 45
 Pro His Leu Ala Tyr Arg Asp Gln Pro His Gly Arg Leu Leu Arg Pro
 50 55 60
 Gly Asn His Gly Glu Gly Arg Asn Gly Asp Thr Phe Leu Leu Ser Val
 65 70 75 80
 Leu Gly Lys Arg Ser Leu Gly Gln Val Ala Glu Gly Gly Asn Glu Arg
 85 90 95
 Gly Val Ser Ser Trp Arg Val Ser Pro Phe Pro Trp Ser Pro Thr Gln
 100 105 110
 Leu Ser Ser Pro Leu Met Trp Gly Gly Ala Gly Gly Met Asp Ser Ala
 115 120 125
 Pro Asp Ser Thr Val Val Val Tyr Arg Gly Ile Arg Arg Glu Ser Glu
 130 135 140
 Gln Asn Thr Leu Leu Gln His Pro Leu Ala Pro Arg Pro Met Met Glu
 145 150 155 160
 Pro Arg Glu Ala Gly Gln His Val Gly Ala Ala Asn Gly Ala Gln Glu
 165 170 175
 Asp Val Ala Phe Asn Leu Ile Ile Leu Ser Leu Thr Glu Gly Leu Gly
 180 185 190
 Leu Gly Gly Leu Leu Gly Asn Gly Ala Val Leu Trp Leu Leu Ser Ser
 195 200 205
 Asn Val Tyr Arg Asn Pro Phe Ala Ile Tyr Leu Leu Asp Val Ala Cys
 210 215 220
 Ala Asp Leu Ile Phe Leu Gly Cys His Met Val Ala Ile Val Pro Asp

<212> DNA
<213> Homo sapiens

<400> 43
cagtgcgagccg agatgggtgcc attgcactct agcctggggc aacagagcca gactccatct 60
ccaaaaaaa aaggccattc tgaggatcaa ggcaccacta gcaacaggga gccccatggg 120
tctcagacc cctccccaca tctcctggtc cctgccccca cctggcgtag agggaccagc 180
cccacggaag gctcttgagg ccaggttaacc atggggaggg gaggaatggg gacaccttcc 240
tcttgagtgt cttagggaag agaagcttag gtcagggtgc tgagggtgga aatgagagag 300
gggtctcttc ctggagggtc tcaccattcc cttggteacc caccctaact tcatctcccc 360
tgatgtgggg aggagcaggg ggcattggatt cctgagcccc agactcaact gttgtgggtt 420
acaggggcat caggagagag agcgagcaga acacactcct gcagcatccc ctggcccccc 480
gccccatgat ggagcccaga gaagctggac agcactggg ggcgcgaac ggcgccagg 540
aggatgtggc cttcaacctc atcactctgt ccctcacga ggggctggc ctegggtggc 600
tgctggggaa tggggcagtc ctctggctgc tcagctccaa tgtctacaga aaccccttcg 660
ccatctacct cctggacgtg gctggcggg atctcatctt ccttggtctc cacatggttg 720
ccatcgctcc cgaattgtgt caaggccggc tggacttccc gggcttcgtg cagaccagcc 780
tggcaacgtc gcgcttcttc tctacatcg tgggcctgag tctctggcg gccgtcagcg 840
tggagcagtg cctggccgcc ctcttcccag cctgggtact gtgcgcgcgc ccaegccacc 900
tgaccacctg tgtgtgcgcc ctcaactggg ccctctgctt gctgctgcac ctgctgctca 960
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ctggggccag ccggaactgg agggagcctt ggtgggtgac ccggtcatgt gctgtcaaa 1560
ttgtgacctt tggctcggag catgaggctc ccctggggag cagctggaaa gg 1612

<210> 44
<211> 311

<212> PRT
<213> Homo sapiens

<400> 44

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Met Met Glu Pro Arg Glu Ala Gly Gln His Val Gly Ala Ala Asn Gly
1          5          10          15

Ala Gln Glu Asp Val Ala Phe Asn Leu Ile Ile Leu Ser Leu Thr Glu
          20          25          30

Gly Leu Gly Leu Gly Gly Leu Leu Gly Asn Gly Ala Val Leu Trp Leu
          35          40          45

Leu Ser Ser Asn Val Tyr Arg Asn Pro Phe Ala Ile Tyr Leu Leu Asp
          50          55          60

Val Ala Cys Ala Asp Leu Ile Phe Leu Gly Cys His Met Val Ala Ile
65          70          75          80

Val Pro Asp Leu Leu Gln Gly Arg Leu Asp Phe Pro Gly Phe Val Gln
          85          90          95

Thr Ser Leu Ala Thr Leu Arg Phe Cys Tyr Ile Val Gly Leu Ser Leu
          100          105          110

Leu Ala Ala Val Ser Val Glu Gln Cys Leu Ala Ala Leu Phe Pro Ala
          115          120          125

Trp Tyr Ser Cys Arg Arg Pro Arg His Leu Thr Thr Cys Val Cys Ala
          130          135          140

Leu Thr Trp Ala Leu Cys Leu Leu Leu His Leu Leu Leu Ser Gly Ala
          145          150          155          160

Cys Thr Gln Phe Phe Gly Glu Pro Ser Arg His Leu Cys Arg Thr Leu
          165          170          175

Trp Leu Val Ala Ala Val Leu Leu Ala Leu Leu Cys Cys Thr Met Cys
          180          185          190

Gly Ala Ser Leu Met Leu Leu Leu Arg Val Glu Arg Gly Pro Gln Arg
          195          200          205

Pro Pro Pro Arg Gly Phe Pro Gly Leu Ile Leu Leu Thr Val Leu Leu
          210          215          220

Phe Leu Phe Cys Gly Leu Pro Phe Gly Ile Tyr Trp Leu Ser Arg Asn
          225          230          235          240

Leu Leu Trp Tyr Ile Pro His Tyr Phe Tyr His Phe Ser Phe Leu Met
          245          250          255

Ala Ala Val His Cys Ala Ala Lys Pro Val Val Tyr Phe Cys Leu Gly
          260          265          270

Ser Ala Gln Gly Arg Arg Leu Pro Leu Arg Leu Val Leu Gln Arg Ala
          275          280          285

Leu Gly Asp Glu Ala Glu Leu Gly Ala Val Arg Glu Thr Ser Arg Arg
          290          295          300

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Gly Leu Val Asp Ile Ala Ala
305 310

<210> 45
<211> 939
<212> DNA
<213> Homo sapiens

<400> 45
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gtggccttca acctcatcat cctgtccctc accgaggggc tcggcctcgg tgggctgctg 120
gggaatgggg cagtcctctg gctgctcagc tccaatgtct acagaaaccc cttcgccatc 180
tacctcctgg acgtggcctg cgcggatctc atctctcttg gctgccacat ggtggccatc 240
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gcagcgggtg tctgtgctct gctgtgttgc accatgtgtg gggccagcct tatgctgctg 600
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ctcaccgtcc tctcttctct cttctgcggc ctgcctctcg gcactactg gctgtcccg 720
aacctgctct ggtacatccc ccaactactt taccacttca gcttctctat ggcgcgcgtg 780
cactgcgcgg ccaagcccgt cgtctacttc tgcttgggca gtgccacagg ccgcaggctg 840
cccctccggc tggctctcca gcgagcgctg ggagacgagg ctgagctggg ggccgtcagg 900
gagacctccc gccggggcct ggtggacata gcagcctga 939

<210> 46
<211> 311
<212> PRT
<213> Homo sapiens

<400> 46

Met Met Glu Pro Arg Glu Ala Gly Gln His Val Gly Ala Ala Asn Ser
1 5 10 15
Ala Gln Glu Asp Val Ala Phe Asn Leu Ile Ile Leu Ser Leu Thr Glu
20 25 30
Gly Leu Gly Leu Gly Gly Leu Leu Gly Asn Gly Ala Val Leu Trp Leu
35 40 45
Leu Ser Ser Asn Val Tyr Arg Asn Pro Phe Ala Ile Tyr Leu Leu Asp
50 55 60

Val Ala Cys Ala Asp Leu Ile Phe Leu Gly Cys His Met Val Ala Ile
 65 70 75 80
 Val Pro Asp Leu Leu Gln Gly Arg Leu Asp Phe Pro Gly Phe Val Gln
 85 90 95
 Thr Ser Leu Ala Thr Leu Arg Phe Cys Tyr Ile Val Gly Leu Ser Leu
 100 105 110
 Leu Ala Ala Val Ser Val Glu Gln Cys Leu Ala Ala Leu Phe Pro Ala
 115 120 125
 Trp Tyr Ser Cys Arg Arg Pro Arg His Leu Thr Thr Cys Val Cys Ala
 130 135 140
 Leu Thr Trp Ala Leu Cys Leu Leu Leu His Leu Leu Ser Gly Ala
 145 150 155 160
 Cys Thr Gln Phe Phe Gly Glu Pro Ser Arg His Leu Cys Arg Thr Leu
 165 170 175
 Trp Leu Val Ala Ala Val Leu Leu Ala Leu Leu Cys Cys Thr Met Cys
 180 185 190
 Gly Ala Ser Leu Met Leu Leu Leu Arg Val Glu Arg Gly Pro Gln Arg
 195 200 205
 Pro Pro Pro Arg Gly Phe Pro Gly Leu Ile Leu Leu Thr Val Leu Leu
 210 215 220
 Phe Leu Phe Cys Gly Leu Pro Phe Gly Ile Tyr Trp Leu Ser Arg Asn
 225 230 235 240
 Leu Leu Trp Tyr Ile Pro His Tyr Phe Tyr His Phe Ser Phe Leu Met
 245 250 255
 Ala Ala Val His Cys Ala Ala Lys Pro Val Val Tyr Phe Cys Leu Gly
 260 265 270
 Ser Ala Gln Gly Arg Arg Leu Pro Leu Arg Leu Val Leu Gln Arg Ala
 275 280 285
 Leu Gly Asp Glu Ala Glu Leu Gly Ala Val Arg Glu Thr Ser Arg Arg
 290 295 300
 Gly Leu Val Asp Ile Ala Ala
 305 310
 <210> 47
 <211> 22
 <212> DNA
 <213> Artificial
 <220>
 <223> Novel Sequence
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